Editorial

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Editorial

Artificial intelligence (AI) and solar cells: key technologies for Sustainability and carbon neutrality

Sustainable Development Goals (SDGs), global warming and carbon neutrality are popular keywords nowadays. They are the darlings of the internet, social media, mantra of politicians, career-minded administrators, and golden opportunities for quick thinkers. Our forefathers and pioneers in science and engineering will strongly argue that their main focuses were SDGs, too, despite that this beloved word might not have been invented in their time, while the word sustainability might have different priorities. On the other hand, climatic conditions across the globe are pointing towards inhabitant disaster. New heroes are in town now: Artificial intelligence (AI) and solar cells. The former is a gatecrasher, while the latter, a slow burner.

Yet, numerous studies on artificial intelligence (AI) issues over the last couple of decades have altered the picture around us. This makes the modeling of the human decision-making process more in line with what an actual human does, thus moving away from the black-box model approach.

The regenerative AI has been essentially transforming almost every way we do things. AI can provide translation, coding, teaching, drawing, searching, diagnosis, image analysis, to name a few. Money is flowing into AI, too. It is stated that Nvidia has been carrying the Wall Street, especially the NASDAQ index, while the company has become the most valuable one overtaking the establishments such as Microsoft, Apple and Alphabet[1)]. However, AI is the energy-thirsty beast[2)]. That's where the solar cells come in.

It seems that there is nothing new about the solar energy and solar power these days. It has been around for a couple of decades. The Economist just stated that the installed solar capacity doubles roughly every three years. Credit to the so-called "China's dumping of solar panels"[3)] making some career capitalists unhappy[4)], solar cells generate 6% of the world electricity generation using less than 10,000 square kilometers[5)]. Of course, the intermitted nature of the sunlight demands the electricity storage and lithium becomes a new oil now[6)]. The combination of the solar cells and artificial intelligence will help human beings build a sustainable future. *EVERGREEN* would like to be on the right side of the history and welcome contributions for both research areas.

The editorial team is pleased to publish *EVERGREEN*, Volume 11, Issue 02. In this edition, we have 92 articles (37 regular articles, 20 from ICPEU2023, 7 from QiR2023, 18 from ICMET2021 and 10 from IMAT2021). Our articles focus on several research themes spanning from energy, composite, management, computer science, electrical and electronic engineering, and social science. We are very excited to have an article that showcases the current work on the fusion energy in the QUEST of IGSES. Fusion energy is the holy grail of energy, and we are looking forward to its progresses[7-9)]. We believe our articles are interesting reads featuring citable contributions.

Evergreen would like to record our gratitude to all authors for their impactful research outcomes. We highly appreciate our reviewers for their contributions, which are now recorded on their respective ORCID accounts. Our guest editors have significantly contributed to the handling of the special issues. We acknowledge their firm efforts. Ms Kojima Junko and the team (Ms Mieko Inoue, Mr Masakazu Ito and Mr Yasuharu Ota) have judiciously formatted and

conducted proofs of the articles. We are aware of the latest release of the journal matrices, including Scopus, Scimago and Clarivate. The full analysis of Evergreen performance will be reported in the next issue. The world has been in a dangerous situation from multi-faceted threads, including climatic, energy, political and natural disasters. While the world's elderly leaders are preoccupied with their political gains such as re-election and adding fuel to the fire, the Doomsday clock shows we are 90 seconds to midnight[10,11]. Hopefully, AI can help them with the common sense.

Lastly, let us gift a scene of 'Green Asia', one of the key words of *EVERGREEN*.

Jun Tanimoto (Editor-in-Chief)
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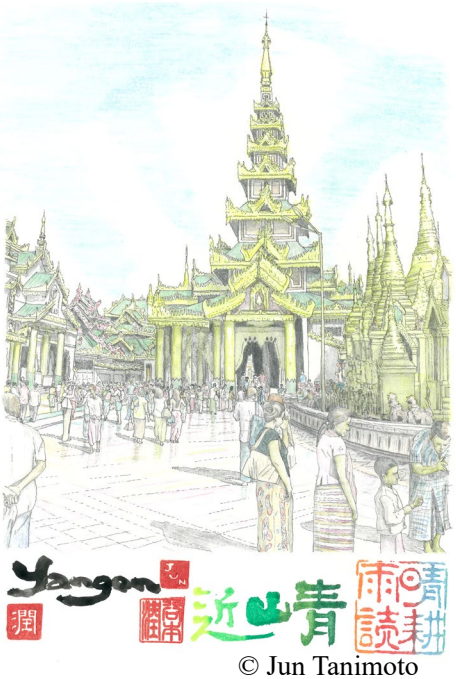

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